abcam

ab302829

Alexa Fluor® 647 Anti-CD14 antibody [EPR21847]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR21847
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse

Dilution info	1/500
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Target data

See full target information Cd14

Function

Coreceptor for bacterial lipopolysaccharide. In concert with LBP, binds to monomeric lipopolysaccharide and delivers it to the LY96/TLR4 complex, thereby mediating the innate immune response to bacterial lipopolysaccharide (LPS) (PubMed:16148141). Acts via MyD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response (PubMed:15895089, PubMed:8612135). Acts as a coreceptor for TLR2:TLR6 heterodimer in response to diacylated lipopeptides and for TLR2:TLR1 heterodimer in response to triacylated lipopeptides, these clusters trigger signaling from the cell surface and subsequently are targeted to the Golgi in a lipid-raft dependent pathway (By similarity). Acts as an accessory receptor for M.tuberculosis lipoproteins LprA, LprG and LpqH, in conjunction with coreceptors TLR2 and TLR1. The lipoproteins act as agonists to modulate antigen presenting cell functions in response to the pathogen (PubMed:19362712). Binds electronegative LDL (LDL(-)) and mediates the cytokine release induced by LDL(-) (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CD14 also known as cluster of differentiation 14 is a glycoprotein with a molecular mass of approximately 55 kDa. This protein is expressed mainly on the surface of macrophages monocytes and to a lesser extent on neutrophils. CD14 exists in two forms: membrane-bound (mCD14) and soluble (sCD14). It functions as a co-receptor along with TLR4 (Toll-like receptor 4) and MD-2 for the detection of bacterial lipopolysaccharide (LPS) which is an important component of the outer membrane of Gram-negative bacteria.
Biological function summary	This glycoprotein plays a significant role in the innate immune system by recognizing pathogen-associated molecular patterns (PAMPs). It is part of a receptor complex where CD14 acts alongside LPS binding protein (LPS-R) TLR4 and MD-2 to facilitate pro-inflammatory signaling in response to microbial invasion. By binding to LPS CD14 initiates and amplifies the immune response leading to the production of cytokines and the recruitment of other immune cells to the site of infection.

Pathways	CD14 interacts with the toll-like receptor signaling pathway notably involving TLR4. Upon LPS detection CD14 assists in the activation of TLR4 triggering downstream signaling cascades such as NF-κB and MAPK pathways. These pathways result in the transcription of inflammatory cytokines and are essential for the host defense mechanism. The protein complex involving CD14 further interacts with adaptor proteins like MyD88 and TRIF facilitating signal propagation and the immune system's ability to respond to pathogens.
Associated diseases and disorders	Researchers have linked CD14 to sepsis and atherosclerosis. High levels of soluble CD14 (sCD14) are often observed in patients with sepsis indicating its participation in excessive systemic inflammation. In atherosclerosis CD14's role in recognizing LPS contributes to chronic inflammation and the development of plaques in arteries. Through these diseases CD14 connects with TLR4 emphasizing its impact on inflammatory responses and its potential as a therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

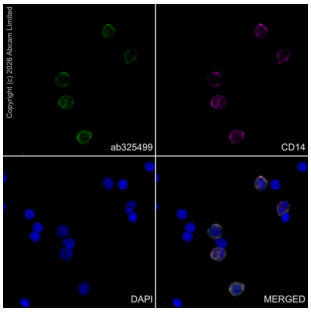
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

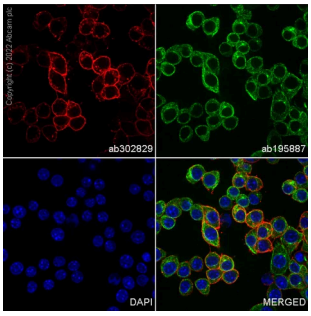
4 product images



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-CD14 antibody [EPR21847] (ab302829)

CD14 Immunocytochemistry/ Immunofluorescence staining of Human PBMC using rabbit Anti-CD14 antibody

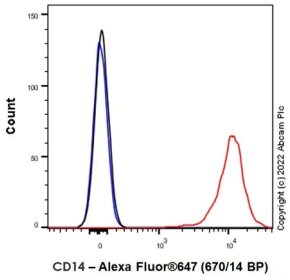
Immunofluorescent analysis of 4% Paraformaldehyde fixed 0.1% Triton X-100 permeabilized Human PBMC cells labelling TLR2 with ab325499 at 1/50 (9.82 µg/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody as secondary at 1/1000 (2 µg/ml) dilution. Confocal image showing cytoplasmic staining in human PBMC (shown in green), which co-stained with CD14. The counterstain Anti-CD14 rabbit monoclonal antibody (Alexa Fluor® 647) (ab302829) was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-CD14 antibody [EPR21847] (ab302829)

CD14 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD14 antibody

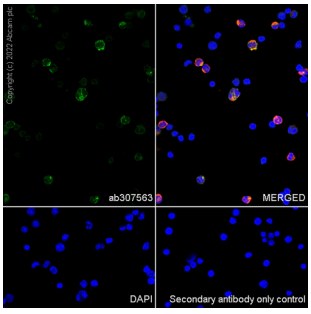
Immunocytochemical analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells staining CD14 using ab302829 at a 1/500 dilution (1.0 µg/ml) (Red). Counterstained with ab195887 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 488) at a 1/200 dilution (2.5 µg/ml) (Green). Nuclear counterstain is DAPI (Blue). Confocal image showing membranous and weak cytoplasmic staining on RAW 264.7 cells.



Flow Cytometry - Alexa Fluor® 647 Anti-CD14 antibody [EPR21847] (ab302829)

CD14 Flow Cytometry staining using rabbit Anti-CD14 antibody

Flow Cytometry analysis of RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells stained for CD14 using ab302829 at a 1/500 dilution (0.1 µg) (Red) compared to Rabbit IgG monoclonal [EPR25A] - Isotype Control (Alexa Fluor® 647) (ab199093) (Black) and cells without incubation with primary antibody and secondary antibody (Blue). Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-CD14 antibody [EPR21847] (ab302829)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1%Triton X-100 permeabilized rat bone marrow cells labelling SIRPA with ab307563 at 1/250 dilution (3.97 ug/ml), followed by ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 ug/ml) (Green). Confocal image showing cytoplasmic staining in subsets of rat bone marrow. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab302829 Anti-CD14 rabbit monoclonal antibody (Alexa Fluor® 647) was used to counterstain tubulin at 1/500 dilution (1 ug/ml) (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 ug/ml).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.